The RARS EXCITER

Issue 240 March, 1990 Club Repeaters: 146.04/64 & 223.04/224.64

Bruce Eggers, WA9NEW Hospitalized

We're somewhat late in reporting this, but sometime January 30 / 31, Bruce suffered a series of massive strokes. His XYL, Pat, was away visiting their daughter and new grandchild. Bruce was found by his other daughter, and it's estimated Bruce was unconscious for some 8 - 15 hours before being found.

Bruce is currently in Wake Medical center, receiving rehabilitation therapy. Latest word is that he will be coming home in 2 to 3 weeks, but continuing outpatient therapy at Wake Medical Center.

Bruce has made significant contributions to the state of Amateur Radio here in the Raleigh area, serving as President of RARS for 4 years, and acting as ARRL Public Information Officer, and was very active in all areas of Public Service. He also created and maintained the "Ham Calendar" information that was available on local computer Bulletin Boards, and was a prolific author with many, many submissions to the EXCITER, QST, ARRL Antenna Handbook, and World Radio. A firm believer in the youth of America, he frequently visited area schools, and made presentations on ham radio, project OSCAR, and lately, project DOVE.

The strokes have left Bruce paralyzed on his right side, unable to speak, and with significant memory loss.

To help stimulate his memory and help in his recovery, all friends of Bruce are urged to visit (please -- if you never met Bruce, don't visit -- that might confuse rather than help) All of his ham acquaintances

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FCC Announces No-Code NPRM

The following is the text of the press release on the Notice of Proposed Rule Making, Docket 90-55

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February 8, 1990

FCC PROPOSES NEW CODELESS CLASS OF AMATEUR OPERATOR LICENSE (PR DOCKET 90-55)

The Commission is proposing to amend its rules by establishing a codeless class of amateur operator license to be called the Communicator Class.

The Communicator Class would be incorporated into a simplified licensing structure containing four ascending steps: 1) Communicator 2) General, 3) Advanced, and 4) Amateur Extra Classes.

Current Technician and Novice Class operator licenses would be grandfathered indefinitely, with no new licenses issued for those license classes but existing licenses could be modified or renewed.

The codeless operator class license would satisfy three major objectives. The first objective is to offer an entry level license for all persons who find telegraphy a barrier to pursuing the purpose of the amateur service. The second objective is to design a codeless license that can easily be implemented into the current licensing process. The third objective is to avoid any negative effect upon current licensees,

Continued on Page 16

The Raleigh Amateur Radio Society, Inc. (RARS), founded in 1969, has grown to be one of the premier radio clubs in North Carolina. Current membership exceeds 290.

The objectives of the club are to promote world wide friendship through Amateur Radio; to be of public service by providing radio communication in times of disaster, emergency, or civic need; to educate members in radio technique, and to assist in obtaining Amateur Radio licenses.

All persons interested in Amateur Radio, currently licensed or not, are eligible to apply for membership to the club.

Dues to the club are $10.00 per year (which runs from July 1 to June 30). Applications for membership may be obtained from any of the officers named below; from the newsletter editor, named on the facing column; or at any RARS Meeting.

Club meetings are held the first Wednesday of every month, 7:30 PM, at the Raleigh YMCA, 1601 Hillsborough St.

In addition to the many social and special events, the club sponsors a 2 m repeater, W4DW, on 146.04/64 MHz, and WA4PEN on 223.04 / 224.64 MHz. Both repeaters cover all of Raleigh, and most of the surrounding Wake County area. Auto-patch privileges are available on W4DW to duly licensed RARS members. Future plans call for additional repeaters on the 50, 146, and 450 MHz amateur bands.

1990 Officers:

President:	Jim DuBreck, N4BYO 1209 Shelly Road Raleigh, NC 27609 781-9437
Vice President:	John Thomas, KK4JB 5228 Cedarwood Drive Raleigh, NC 27609 782-1609
Secretary:	Ronny Reams, WA4MJF 3509 Rolesville Road Wendell, NC 27591 266-4434
Treasurer:	Tim Buehlmann, N4IQA 1314 Chancy Rd. Raleigh, NC 27606 851-7738

The EXCITER is published monthly by the Raleigh Amateur Radio Society, and is mailed at no cost to its members.

Letters to the Editor, technical articles, items of interest to the ham community and guest editorials are actively solicited.

Any article published in the EXCITER does not necessarily represent the views of, the Officers, Board of Directors, Editor, or Society Membership, nor does publication thereof represent concurrence by the Officers, Board of Directors, Editor, or Society membership with the contents of the article.

Articles will be printed at the discretion of the Editor, and no article will be published unless it is accompanied by the name(s) of the person(s) submitting the article.

All copy must be in the hands of the editor by the end of the Board of Director's meeting on the third Wednesday of each month. Articles submitted for publication may be hand or type written, an ASCII file on disk (IBM or APPLE format), transmitted electronically via telephone modem, or on the ham bands using RTTY or PACKET.

Ham related items for sale by the members will be advertised without charge for one issue, but may be re-submitted as often as desired. These ads must be non-commercial in nature.

Commercial ads will be run in return for the following donations to the club:

	Single Issue	Full Year
Business Card	$5.00	$25.00
Quarter Page	$10.00	$50.00
Half Page	$20.00	$100.00
Full Page	$30.00	$150.00

(Commercial ads must be of "camera-ready quality," and obviously can not be sent via ham bands.) Due to the reprographic process used, no color copy can be accepted.

Advertisers are guaranteed a minimum monthly mailing of 300 copies.

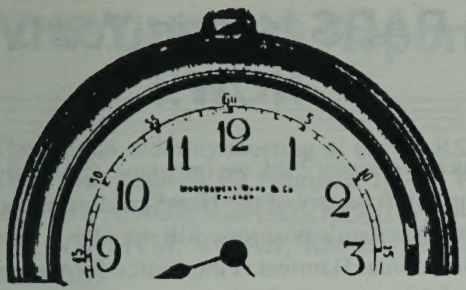
Editor: Vince Yakamavich, AA4MY
220 Carriage Trail
Raleigh, NC 27614
847-8512 (Home)
850-5390 (Office)

SPECIAL SERVICE CLUB ARRL

ARNS Amateur Radio News Service

AMSAT

SOLRA Southeastern Repeater Association MEMBER



Minutes of the Meeting

The regular monthly meeting of the Raleigh Amateur Radio Society was held 07 February 1990 at the YMCA on Hillsborough Street with exams. President Jim DuBreck, N4BYO, called the meeting to order and welcomed the members and guests.

Jim gave a report on Bruce Eggers', WA9NEW, condition following several massive strokes. Anyone able to help get Bruce into the V. A. Hospital, provide car service and / or teach Bruce's wife to drive, assist with an antenna party at his QTH, or interested in helping with Public Information Officer duties, please call Jim at 781-9437.

KC4AQC won the "Wet Noodle Award". He was the first to phone Bruce about the Exciter quiz last month.

A 62 year old hamfest announcement was available for examination, brought in by Tim, N4IQA.

The president announced that the Tune-In-The-World night at the McKimmon Center needed operating radio set ups for the March first demonstration.

Also, RARS needs two Meter control operators for the Thursday and Sunday nets. Contact K4ABJ.

A sample of the RARS QSL card was shown. See the Exciter or K4MC for details.

A sign-up list was passed around by Al Mullis, K4GOE, for volunteers to sell Hamfest tickets.

It was announced by the President that 35-watt solar panels are available for $159 or four for $600. See K9PM for information.

For the door prizes, N4IQA offered a 20 year old QST and a domestic Callbook.

James, KA5IEC, announced that changes were in progress on the RARS BBS (781-2530). 2400 baud should be available in a week. 66 registered users representing 20-25% club participation are on the system so far.

K4ABJ announced that a 1990 Callbook was available on the 04/64 repeater for checking calls.

N4IQA asked for ideas / suggestions and committee volunteers on the field day preparations.

An announcement was made that on April 28, 1990 RARS will operate a special event station with the Manteo radio club.

Another announcement was made that the annual awards banquet will be held at Balentines [cafeteria, Cameron Village Shopping center] on the first Tuesday in March.

Tom Bell from CP&L gave the program on "Electricity and Nuclear Power."

After the program, door prizes winners were: N4XOU won the 20 year old QST. KA4NSA won the Callbook but allowed it to be drawn again which was won by W4JUG.

Social time started at 9:00 PM following the close of the meeting.

Glenn Clary, WA4LHE
(for Ronnie Reams, WA4MJF
RARS Secretary
Away on military duty)

No March Meeting!!

Annual Awards Banquet Tuesday, March 6

As you know, in the month of March, in lieu of the regular meeting, the Annual Awards Banquet is held.

If you havn't already done son, **NOW** is the time to call John, KK4JB, @ 782-1609, and let him know that you'll be attending the banquet! This is one of the club's social highlights of the year!

Where: Ballentines Cafeteria, Cameron Village
When: Tuesday, Mar 6, 6:30 PM
Cost: Around $5 to $6 per person

See you there!

Welcome New Members!!

Let's extend a warm RARS welcome to 4 area hams this month:

Jim Craig, W7HVU, Durham
Michael Crowder, KB4LFH, Raleigh
Alan Knight, AA4FU, Raleigh &
Alexander Simmons, KC4IOO, Smithfield

With the addition of these fine gents (and the renewals of a couple of previously "expired" members) the roster stands at **329** members!

We hope the new members will become "radioactive" and join in the many activities and events RARS has to offer. Again, **WELCOME!!**

EXCITER on Tape

In case you weren't aware, the EXCITER is available on audio tape to any member who has the need (visual or physical handicapped).

If you have such a need, or you know of someone who does, contact Lynn, KC4NJB @ 787-1111.

[Ed. Note: A big RARS **THANK YOU** to Lynn and **all** involved in this effort!]

Assistance Needed!

The RARS Homebrew SIG is looking for donations of MSDOS AT parts for the construction of an AT computer for KC4GFR (who is visually "challenged" & on a limited income). If you have any such parts you would like to contribute, please contact either KM4BU or N4UOF BEFORE the Charlotte Hamfest. A small committee has been created within the Homebrew SIG to coordinate the "scrounging" of parts for a computer for Randy at coming hamfests. If you're good at scrounging computer parts, please contact either Walt, KM4BU @ 481-3856 or N4UOF @ 469-1758 and become part of the team.

--73-- Al, N4UOF

RARS Needs You... NOW!!

As of February 23rd, we only have about 30 people pulling a shift on any of the HamFest duties, and there are two chairman's positions still open!!.

Our annual Hamfest is the source for the majority of the club's operating budget.

Please help us raise money for YOUR club!

RARS asks each and everyone to lend a helping hand. Please contact one or more of the chair people to sign-up for a shift at our HamFest, or call AB4LR to volunteer to fill one of the chairman's slots.

HAMFEST CHAIR AB4LR, Dave, 231-7744;
TICKETS K4GOE, Al Mullis 850-0640
SECURITY WA4MJF, Ronnie Reams 266-4434
CLEAN-UP AB4EL, Steve Modena 737-2246
TALK-IN ????? HOW ABOUT YOU!
TABLES ????? HOW ABOUT YOU!

These people are trying very hard to make this the best HamFest ever. But it won't happen without your help, that's a fact.

Chris, KN4DT, @ 781-7033

WA9NEW

(from page 1)

are urged to send Bruce a card (get well and / or QSL) with their best wishes. (Send to Bruce's home QTH.)

There are on-going efforts to help Bruce and his XYL Pat through this difficult time (both with work-parties and financial resources). Donations to the "Bruce Fund" can be made to RARS' Treasurer, N4IQA.

Keep tuned to the 04/64 repeater and the RARS computer BBS for updates on scheduled work parties and on his condition.

Bruce has made quite an impact on Amateur Radio here in the area. His many and varied contributions to area organizations have touched many people. All of us in RARS wish Bruce a speedy and complete recovery.

aa4my

VHF/UHF SIG Report

The regular monthly meeting of the RARS VHF/UHF SIG was held on 08 February 1990. Present were N4PNO, AB4OZ, KB4EXL, KC4JJZ, KB4VYP, AB4FY, WD4MYM, K4SAN, KM4BU, KB4MDZ, and WA4LHE.

WA4LHE and AB4OZ called the meeting to order. Chairman, WA4PEN, Ed was out of town due to family illness.

Reports were made on the status of the new repeaters. The 220 MHz repeater continues to operate well. The 440 MHz repeater is working very well due to the hard work of Chet, KB4LAF. The 440 MHz repeater transmit output is only about 20 watts due to low exciter drive to the final amplifier. Efforts are underway to solve this problem with repair parts or replacement modules.

An antenna party was tentatively scheduled for Saturday February 17, 1990 weather permitting at the Dean Witter site.

Alan, AB4OZ, told the SIG about the upcoming state auction February 13. He provided bid sheets for those interested which contained some low-band VHF equipment

Door prize drawings were held and won by the following: KB4VYP won a 6 meter transceiver, KM4BU won a license manual, and KC4JJZ won 2 radio Engineers books.

Jim, WD4MYM, offered to check on FAA auctions where more equipment may be available for Ham use.

Refreshments and a social period followed the business meeting.

Glenn Clary, WA4LHE

AUTO-PATCH CODE

It was changed back in December, but evidently, the word hasn't reached everyone. Check your mailing label on this issue of the EXCITER. You'll find the new code if you're eligible (Tech class & above, and club dues currently "paid"). 73, ***N4IQA***

Homebrew SIG Report

The February 14 meeting of the RARS Homebrew SIG was held at the home of Ed Griest who was an excellent host, as usual. James Martin, KA5IEC, gave a super talk on the basics of direct digital synthesis (DDS) including an explanation of how this new technology will allow the homebrew of broad band HF projects with a high assurance of success.

The group elected new officers to guide the group's activities in 1990. Tom McKee, K4ZAD, was elected as chairman, to be assisted by Jim Smith, AB4TD, as co-chairman. Alan Pitegoff, AB4OZ was selected as coordinator of the Saturday evening Technical Information Net.

RARS owes a big THANK YOU to James Martin, KA5IEC, for his efforts in leading the Homebrew SIG in 1989, and for getting the RARS Bulletin Board up and running. Good luck with the new job James, but hope you are able to return to Raleigh later in the year.

The March meeting of the SIG will be on Wednesday, March 14, @ 7:30 PM, at the home of Bill Ransier, N1BA. Bills address is 8200 Hambleton Ct., Raleigh, and phone 846-2692. There will be a talk in on 04/64. The subject will be "Antenna Noise Bridges Revisited." If you missed Bill's great pitch on this subject in November -- here's your chance!

Tom McKee, K4ZAD

RARS Member N4SST Wins Grand Prize at Elkin

Congrats are definately in order to **Milton Blalock, N4SST**. He and son Andy, N4SSX, travelled to the Elkin hamfest, but left early. The word caught up with them that evening, Milton is now the proud owner of a new ICOM IC-725 HF rig! Milton currently runs a vintage Hallicrafter's setup, with a newer YAESU as a spare. "But", he sez, there's plenty of room for the new rig under the dash of his car! (Just in case it doesn't fit, Milton, I have room ...) **CONGRATS!**

RARS Class NearsCompletion

By the time you read this, the Spring '90 RARS Novice / Technician class will soon be history: Test night is Monday, March 5. We wish the following students luck in their exams, and a warm welcome into the ranks of RARS and the fine hobby of Amateur Radio:

Mary Beam, Tom Beam, Tom Byrd, Joana Cirria, Sue Doligalski, Darrell Gammon, Thomas Gladden, Stan Goldsmith, John Grabowski, Michael Haislip, Mike Hamlett, Kathy Heinsohn, John Irwin, John Jaskolka, Jeff Johnson, Paul Louis, "Bud" Luck, Robert Mays, Zephyr Mays, Robbin McMurray, Shane Mitchell, Grace Royster, Peter St. Wecker, Terry Smith, Jean Tawes, Ed Tawes, Chris Triantaphyllou, Steve Williams, Larry Wittlief, and Edward Woodlief.

Once again, our collective hats are off to all of the fine RARS volunteer instructors who have donated their time & efforts to make this class happen.

Special thanks to Bob Rinn, N4VQN, Dave Hyte, N4XPE, Carl Gerdes, N4XPB, John Mentha, K4FAD, and Jim DuBreck, N4BYO for their Herculean efforts.

[Ed. Note: It's also great to note that 3 names out of those 5 are fairly new to RARS. Their enthusiasm and club spirit is inspiring to see!]

New Calls!

Just when you thought you knew who was who ...

Ron Olson is now **N4XXF**
William Davison is now **N4XOW**
Michael Malpass is now **N4XXG**
Jim Smith, ex N4WJM, is now **AB4TD**
Phil Nguyen, ex KC4NQZ, is now **N4XZI**
Chris Shackleford, ex KC4GRV, is now **KN4DT**

Congrats to all!

VE Report

Feb. 7 Session Results

Twenty four applicants were present for the 7 Feb. session, and of those, 15 were successful in up-grading. RARS Congratulates:

Ron McCann, WB4OZL, now EXTRA
Ken Walker, N4MWN, now Advanced
Carl Gerdes, N4XPB, now Advanced
Alexander Simmons, KC4IOO, now Advanced
Rick Sumrall, N4XPA, now Advanced
Jim Fisher, K3AYS, now Advanced
Chuck Payne, N4VQL, now Advanced
Kirk Newman, KA8SGT, now Advanced
Ernie Schnitz, N4UOC, now General
Dave Hyte, N4XPE, now General
Dr. Roger Woodbury, KC4MNT, now Tech

New Licensees are:

Albert Matos, Fay'ville, Novice + 13 WPM!
Darlena Nguyen, Raleigh, Novice
David Fisher (son of K3AYS), Technician
Robert Kruppa, Cary, ADVANCED

Several others earned partial credit, to complete their up-grades another day.

Highlights of the session were Bob Kruppa, who went from no license to Advanced in one sitting. Bob used to be a ham, but let his ticket expire ... (that explains the code) & he's also an Electical Engineer by profession (that explains the writtens)!

Albert Matos proved that the US Special Forces' code training at 18 WPM (using cypher groups!) is no match for a 13 WPM code test!

It's always good to see more ladies in the hobby... Darlena Nguyen (YL of Phil, N4XZI) successfully passed Novice class, and Barbara Yost (XYL of N4VQT) passed 5 wpm after studying for only 2 weeks! Now, for those writtens...

Two newly certified VEs joined us, and we welcome **Ken Stroud, AB4RQ**, and **Steve Kastelberg, AB4SL**, to the RARS VE Team. Other VEs working

this session were KB4LAF, WA4GIR, AB4EL, NY4H, N1BA, AB4OZ, K4FAD, & AA4MY. Thanks also to KN4G and KK4JB for being available, "on-call."

One slight "problem" at this session -- lots of help at the code table (5 VEs), but a little light on the written table (2 VE's). I should have noticed it, but didn't. If the area you're working is light on help, or you see another area is getting bogged down ... by all means ... try to rectify the situation!! Tnx.

Next area up-grade opportunities: --

Monday, March 5. 7:30 PM, McKimmon Center, NCSU (primarily for current class attendees, but session is open to the public. Call AA4MY @ 847-8512 for more info.)

Saturday, March 10, 9:00 AM, Durham. Contact Pete, KY4Y @ 544-3215 (pre-registration strongly advised!)

Sunday, April 8, 10:00 AM RARS HAMFEST!

RARS VE's Note:

Please plan to help at both the McKimmon Center & the HAMFEST!! We need YOU!

73, Vince, AA4MY

2 Meter SIG

The next meeting of the RARS 2 meter SIG will be on Tuesday, Mar 27th. Training on the technical aspects of repeaters will continue. If you use the repeater, we can use your help. the meeting will be at the YMCA, at 7:30 PM.

Alan, AB4OZ, @ 787-1111

New Repeater in Smithfield

147.390 (up 600) is the frequency for the Triangle East ARC's new repeater, signing W2AC. This club is less than a year old, and already they have held a super ham-fest, and now a new repeater! Way to go, guys! Kudo's to: **W2AC, WK2F, and KK4YP**, et. al!

New Jersey Hams Have Hope

The state of New Jersey has one of the worst radio receiver laws in the country. Adopted in 1977, it forbids the carrying in a car of any "shortwave radio receiver operative on frequencies assigned by the [FCC for] governmental uses," unless one has a permit from the local police. This burdensome law dates from a time when police departments used shortwave channels for dispatching. As most of the newer ham equipment offers "extended coverage receivers," it has been interpreted to ban the mobile use of most ham radio equipment in New Jersey.

Last spring, Frank Terranella, N2IGO, and other residents put forward a draft bill to replace their state's mobile receiver law. The intent was to protect the content of monitored communications against misuse, without limiting the possession or use of mobile radio receivers.

Unfortunately, the 1989 legislative session adjourned with no action taken on either the Assembly or the Senate versions of the bill, so they expired. However a similar bill was introduced at the start of the State Senate's 1990 session. On Jan 18th, N2IGO testified before the Senate Committee, and the bill unanimously passed the committee and was sent to the Senate floor for consideration.

The bill now looks like it has a good chance of being signed into law.

W5YI Report 2/1/90

Uniden Targets 10m Rigs to CB-ers

"Uniden is apparently still trying to sell 10 meter ham transceiver to truckers. They have a full page ad in the Jan 1990 issue of "Overdrive" aimed at the 18-wheeler market. They offer $100 off a PT104 Trucker Radar Detector through Feb 28th, "... when you buy our HR2510 radio or PT104 Trucker CB radio." The ad does not state that the HR2510 is a 10 meter amateur transceiver or that a license is required for it's operation."

W5YI Report, 2/1/90

MAKING ANTENNAS PLAY

by Steve Modena, AB4EL

This is a running account of how Bruce, N4UOD and Steve, AB4EL constructed a multiband, multidipole antenna at the UOD QTH. A multidipole is several parallel dipoles sharing one feedpoint. Bruce had made a multidipole antenna with the longest dipole for 80 meters. The antenna worked on 80 meters, but had impossible to tame SWR values on the other bands. This high-SWR syndrome has been experienced by several other people who built their antennas according to the specifications for multidipoles in the last (not latest) ARRL Antenna Book.

There are two essentials to constructing this antenna: 1) measuring antenna impedance AT THE FEEDPOINT and 2) adjusting each antenna to resonate at a target frequency on each band.

Point one was easy because Bruce's dipole spanned his house's roof. We adjusted the position and height of the antenna so that we could make impedance measurements at the feedpoint while standing on the peak of his roof. Our "impedance measurements" consisted of finding the resonant frequency of the antenna with my MFJ 202 noise bridge connected to and hanging from the coaxial connector of the antenna. The "noise" was received on my battery-powered Kenwood TS-430S perched on the chimney.

"Impedance measurements" consisted of tuning the receiver to the desired band (say 20 meters), nulling the noise bridge for zero reactance, connecting the noise bridge to the antenna and then finding the frequency and resistance combination for deepest noise null as heard on the receiver, i.e. RESONANCE.

[Nulling for zero reactance: short circuit the "unknown" terminal of the bridge, set the resistance knob to 0 ohms, adjust the reactance knob to noise null. Don't touch the reactance knob again while measuring on that band. Renull when switching to another band.] For example: If our target frequency is 14.275 Mhz, but the antenna resonates at 14.135 Mhz, then the antenna is "too long" and would show resistive plus inductive impedance at 14.275 Mhz. If the antenna were resonant at 14.347 MHz, then it is "too short" and would show resistive plus capacitive impedance at 14.275 Mhz. If the antenna resonates at 14.275, then the antenna shows purely resistive impedance at the target frequency (14.275 Mhz) and is "just the right length!"

We began by stripping off the higher frequency dipoles, leaving only the 80 meter dipole (Fig. 1), which resonated around 3.980 Mhz. Then we strung the twenty meter dipole under it (Fig. 2). We cut the length of the 20 meter dipole to 492/14.0 Mhz = 35.14 feet (a free space half wave at 14.0 Mhz, well below the target frequency of 14.275 Mhz.). First we measured the RESULTING resonant frequency in the 80 meter band. Frequency had shifted down to about 3.920 Mhz, but we had not PHYSICALLY lengthened the antenna. Shifting to 20 meters, the resonant frequency was 14.600 Mhz! The 20 meter antenna was too short, though as a stand-alone dipole it would have resonated below the 20 meter band. We left the 20 meter antenna alone for the moment.

Next we added the 40 meter dipole (Fig. 3). As a safety precaution, we cut it to 492/6.8 Mhz = 72.3 feet PLUS we added 1 foot more to each end for insurance! Again, systematically, the 80 meter resonance was about 3.915 Mhz (a little further shift), the 20 meter resonance moved up to 14.70 Mhz, and the 40 meter resonance was below 7.0 Mhz (whew!). Now by cutting equal amounts off each end of the 40 meter dipole, we moved the resonance frequency up to 7.175 MHz, the target frequency on that band. I don't recollect how much we took off, but the antenna is physically longer than needed for that frequency as a stand-alone dipole. A recheck of 80 meters showed that resonance was still about 3.915 Mhz. 20 meters was still above 14.7 Mhz.

Returning to the 20 meter dipole, we lengthened it by 1 foot to lower its resonant frequency. The calculation was: (492/14.275 = 34.466 ft.) - (492/14.7 = 33.469 ft.) = 1 foot.

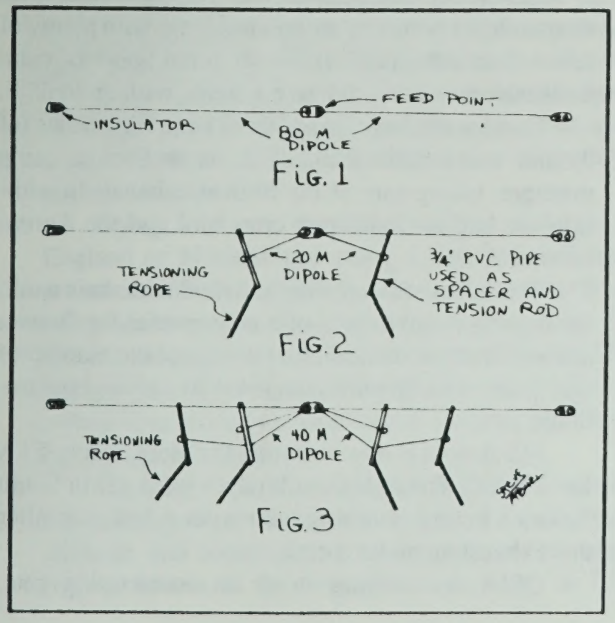
I recollect that we came close to the target frequency. A recheck of 80 and 40 meters show no discernible frequency shifts. A check on 15 meters (3rd harmonic mode of the 40 meter antenna) did not turn up a resonance anywhere from 20.0 to 22.5 Mhz, but still loaded up quite well.

The finished antenna works well for SSB operation on 80, 40, 20 and 15 meters and receives good signal reports (ask Bruce). Tuneup is easy: no intractable high-SWR syndrome.

We provide no formulas for cutting each antenna: it's not possible. Probably if the position of the 20 meter dipole were swapped with the 40 meter dipole, the lengths would be different for both. It's likely that the 80 meter dipole's resonance would be only slightly affected. Or if the spacing were changed, the required lengths to hit the target frequencies would be different. In lieu of a noise bridge, these adjustments could be made with a frequency dip meter. The 40 and 80 meter dipoles could be accurately adjusted; the 20 meter less so.

The important elements for success in making a multidipole that really works are: be systematic, be able to measure resonant frequencies AT the antenna feed point, add one dipole at a time, start with wire lengths longer than needed, keep track of what happens to the resonant frequency of each dipole, and adjust each dipole to a "target frequency. The standard dipole formula (492 x 0.95)/Freq. Mhz. does not apply AT ALL for a multidipole antenna.

The newest edition of The ARRL Antenna Book says of a four- wire multidipole: "...[I]n practice it has been found difficult to get a good match to a coaxial line on all bands.



The 1/2-[wavelength] resonant length of any one dipole in the presence of the others is not the same as for a dipole itself, and ATTEMPTS TO OPTIMIZE ALL FOUR LENGTHS CAN BECOME A FRUSTRATING PROCEDURE." (emphasis added). So you see what you can accomplish when you don't pay attention to conventional wisdom!

Tower Tragedy

[Joplin, MO] Roy Webster was killed on his 38th birthday in a fall from the 120 foot level of Richard (KM0J) McKelvey's antenna tower.

Roy was a self-employed tower technician, working on his first amateur antenna installation. He grabbed an unbolted support while descending the tower, which broke away from the tower.

Roy was not able to obtain insurance because of his occupation. Amateurs who wish to contribute to a fund to help his wife Rhonda and their 13 year old daughter Amy may send donations to Box 337, Wyandotte, OK 74370

The DX Bulletin, 2/9/90

[Ed Note: Please guys ... be careful! Twelve feet or 120 feet -- either can do you in!]

FCC Expands 6 Meter Repeater Allocations

ARRL BULLETIN 5 ARLB005
FEBRUARY 1, 1990

THE FCC HAS AMENDED ITS RULES BY EXPANDING THE SIX METER REPEATER SUB-BAND FROM 52 TO 54 MHZ TO 51 TO 54 MHZ. THIS WAS DONE TO PERMIT THE OPERATION OF ADDITIONAL REPEATERS TO MEET THE INCREASED DEMAND FOR SUCH OPERATION.

THE COMMISSION STATED THAT IT WAS CONFIDENT THAT VOLUNTARY BANDPLANS WILL ASSURE THAT WEAK SIGNAL WORK IN THE DX WINDOW AND OTHER AMATEUR USES WILL BE ADEQUATELY PROTECTED.

Bouvet Island DX-pedition

[Ed. Note: The recent DX-pedition to Bouvet Island (a little speck of land off the tip of Africa, just this side of the Antarctic circle) had some rather interesting moments. Bouvet, one of the most sought after DX "countries", was visited by a multi-national team of 5 hams, solely for the purpose of contacting other hams. Several RARS members talked to them. I heard the pile-ups, and didn't even try! Ever dream about going on your own DXpedition? I'd advise against Bouvet. Read on...]

We arrived at the island on the 25th of December, in the early afternoon. They had to anchor on the lee (south) side of the island because of the weather. On the 26th, they had to move to the north side because of the changing wind direction. The waves were estimated to be about 20 - 30 feet high, in gale force winds, with snow and sleet so no helicopter takeoff was possible.

In the afternoon of the 27th, the weather improved and the ship moved to the west coast, anchoring off Nyroysa, the camp site. The first helicopter takeoff was reported "live" by Einar at about 1900 UTC. They managed to lift 4 men and the major part of the equipment that evening before dark. Later Einar told us they had anchored at the lee side of a stranded iceberg to be sheltered enough to allow helicopter flying.

The rest of the landing crew and equipment were landed the next morning before weather again prohibited flying.

The first QSO was at 2028 UTC on the 28th on 14145.

Because of the turbulent wind conditions on the east side of the island, we had to cancel plans for the eastern camp, thereby setting up 5 full station in the Nyroysa area. Altogether 5 stations were operational, often working CW and SSB on the same band. All stations had beams for 10/15/20 on 20 foot masts, running ICOM 751-A's and IC2KLs at full power.

A Minooka Special was used on 160/80/40 together with Butternuts which was shared between stations. Later during the operation, dipoles were erected for 80/40.

Only minor interference problems were encountered with this close proximity of operating frequencies and antennas. The operators had separate tents, spread out in the Nyroysa area, overlooking the S. Atlantic ocean to the west from about 50-60 meters altitude, 100 - 200 meters from the beach.

The sight of large icebergs, some of them striking the bottom near the island was spectacular. Extremely gusty downwinds were a threat to the camp at all times, pulling up tent guy-ropes, actually moving the rigs at times and trying to blow everyone into the 36 degree F ocean.

During the last days of operation, gusty winds damaged Jin and Jacky's beams, and some repair work was necessary to put them back in business.

The first few days of operation, they were short of fresh water, due to the guano in the snow not permitting melting it for drinking. The weather didn't permit helicopter flying for several days and boat landing was not possible more than a couple of days during the 20 days on the island.

Shut down started Jan. 11th, with the helicopter flying in the afternoon the 12th and in the afternoon the 13th before all the equipment and men were safely aboard the Aurora again. Einar was the last to leave the island at 1900 UTC.

Generally, the weather was very unstable, with temperatures normally around freezing, with plenty of rain - sleet and snow. However some hours of calm midsummer weather did give a break, with up to 65 F.

Besides the 5 operators, there were film crews (of 2) and a scientific team of 2, as well as a camp manager, taking care of the Bouvet cuisine! In addition, we had the helicopter crew of 2 and the Aurora crew of 7.

The scientists were very satisfied with their work, confirming the existence of a new special-for-Bouvet marine swallow. In addition they found the number of seal pups were double compared to earlier registrations.

MS Aurora is now steaming for Montevideo, ETA Jan 27 - 28. The fellows will take a week off in South America before returning home, not a bad idea after this exhausting endeavor.

QSLs are coming in at an accelerating rate.

However no return cards can be expected until Mar-Apr due to the printing time and all QSO's will be entered on a PC for easier check, retrieval, and print-out of confirmation later. Some 20-25 "punch guys" are ready for the initial job, while another group will do the actual QSL checking and mailing job. We will be busy for some time to come.

Altogether, the team managed to log 46 - 47,000 contacts, which was done under the least desirable conditions both on the island and at times on the band.

Again thanks to all members of INDEXA for ur support and interest in this DXpedition.

73 es gud DX,
Erling Wiig, LA6VM

Tnx, INDEXA Newsletter, Issue 16

Beam Headings Revisited

Pago-Pago?

Do you ever wonder just how far away the stations that you talk to are? Or wonder where to point your antenna? If you only operate 2 meter repeaters, you have few worries. Using the W4DW repeater, you're pretty much assured anyone you talk to is within 80 or so miles of you. Using HF with a directional array presents a different problem. Let me see ... using my wall map of the US shows Miami about 10 inches "south" of Raleigh, and the scale on the map sez 3.5 inches is equal to 250 miles ... now where did I put my calculator??

Trying to figure the direction from Raleigh to England or Mozambique using a standard wall map presents a different problem: the true direction from one place to another is not what it appears to be on the old Mercator projection map of the world. Heading straight East from Raleigh would put you NOT into central Europe, but rather over the southern portion of the African continent!

Applying some trigonometry, and some convenient reference points on this sphere we call Earth (latitude and longitude), it is possible to calculate what is known as the Great Circle Bearings & Distances. This is the SHORTEST PATH from one point on the globe to another. This information should be quite useful in trying to figure out the optimum bearing to point your beam when trying to snag that rare one!

The mathematical formulas are somewhat involved for your basic hand-held calculator, but are quite manageable using your home computer, and a short BASIC program. (The program is printed in the ARRL's Antenna Handbook, for those computer-philes.)

For those interested more in chasing DX than keying in computer programs, I've plugged in the longitudes and latitudes of **every country on the current DXCC list,** and plotted the bearing (short/long path) and distance (short path).

Since I ran the above article 2 years ago, I've learned something else about DXing ... "long path." At first I just thought those talking of "long path" communication were just bragging -- you know ... "heck, ***anybody*** can talk to England beaming East, ***I*** pointed the beam to the WEST, and ***I*** was 5-9!"

But it really works! Sometimes heading your beam short path, you can't hear anything. But swing it around 180 degrees from where you'd expect, and low and behold!!

The only "logical" explanation I've heard for this phenomonon is beaming Austrailia. Short path is almost dead north (over the N. Pole), but signals usually sound better beaming South south East. The explanation? Beaming short path takes your signal over several large land masses (continents). Signals carry better over salt water, and beaming SSE takes your signal over large expanses of ocean, and only over the tip of South Africa. Okay ... sounds plausible in this case, but how about for all other DX locations? You got me! (Perhaps some big-gun DXer in RARS will enlighten us neophytes as to the whys and wherefores of this phenomenon.)

Experienced DXers say if the distance is over 5,000 mi, listen long path first. Under 5,000 mi, listen short path first (unless you want to brag)! ***REAL DXers***, I'm told, can tell just by listening to the "sound" of the band. (Talkin to some of these guys, I dunno if I should take notes, or put on hip-waders....)

I re-did the print out to include continents just to give an idea of "... where in the world?!?"

Anyway, happy DXing! aa4my

D X C C Beam Headings Centered on Raleigh, NC

Prefix / Country / Continent / Bearing (short/long) / Distance (Stat. mi.) (short path)

A2	Botswana	AF	102 / 282	7,769
A3	Tonga Is.	OC	257 / 77	7,357
A4	Oman	AS	42 / 222	7,533
A5	Bhutan	AS	11 / 191	7,996
A6	United Arab Em.	AS	43 / 223	7,346
A7	Qatar	AS	46 / 226	7,105
A9	Bahrain	AS	45 / 225	7,024
AP-AS	Pakistan	AS	33 / 213	7,667
BV	Taiwan	AS	340 / 160	8,138
BY-BT	China	AS	348 / 168	7,115
C2	Nauru	OC	284 / 104	7,538
C3	Andorra	EU	57 / 237	4,152
C5	The Gambia	AF	95 / 275	4,149
C6	Bahamas	NA	175 / 355	748
C8-C9	Mozambique	AF	106 / 286	6,414
CA-CE	Chile	SA	173 / 353	4,811
CE9/KC4	Antarctica	AN	195 / 15	8,980
CE0	Easter Is.	SA	208 / 28	4,829
CE0	San Felix	SA	181 / 1	4,268
CE0	Juan Fernandez	SA	179 / 359	4,819
CM-CO	Cuba	NA	196 / 16	906
CN	Morocco	AF	71 / 251	3,936
CP	Bolivia	SA	168 / 348	3,672
CR9	Macao	AS	347 / 167	8,348
CT	Portugal	EU	65 / 245	3,725
CT3	Madeira Is.	AF	74 / 254	3,455
CU-CT2	Azores Is.	EU	70 / 250	2,922
CV-CX	Uruguay	SA	161 / 341	5,090
CY0	Sable Is.	NA	54 / 234	1,132
D2-3	Angola	AF	98 / 278	6,990
D4	Cape Verde Is.	AF	97 / 277	3,604
D6	Comores Is.	AF	80 / 260	8,488
DA-DL	West Germany	EU	46 / 226	4,130
DU-DZ	Phillippines	OC	336 / 156	8,720
EA-EH	Spain	EU	61 / 241	3,957
EA6-EH6	Balearic Is.	EU	59 / 239	4,307
EA8-EH8	Canary Is.	AF	79 / 259	3,675
EA9-EH9	Melilla & Ceuta	AF	66 / 246	3,969
EI-EJ	Ireland	EU	46 / 226	3,587
EL	Liberia	AF	98 / 278	4,680
EP-EQ	Iran	AS	38 / 218	6,547
ET	Ethiopia	AF	66 / 246	7,335
F	France	EU	50 / 230	4,029
FT8W	Crozet I.s	AF	121 / 301	9,800
FT8X	Kerguelen Is.	AF	132 / 312	10,582
FT8Z	Amsterdam Is.	AF	103 / 283	11,103
FG	Guadelope	NA	138 / 318	1,649
FG-FS	Saint Martin	NA	138 / 318	1,546
FH	Mayotte	AF	80 / 260	8,624
FK	New Caledonia	OC	265 / 85	8,460
FM	Martinique	NA	139 / 319	1,818
FO	Clipperton	NA	237 / 57	2,603
FO	FR. Polynesia	OC	245 / 65	5,955
FP	St Pier. & Miq Is	NA	49 / 229	1,374
FR/J/E	Juan De Nova	AF	93 / 273	8,640
FR	Glorioso	AF	77 / 257	8,637
FR	Reunion	AF	82 / 262	9,498
FR/T	Tromelin Is.	AF	79 / 259	9,118
FW	Wallis & Fut.	OC	263 / 83	7,184
FY	French Guiana	SA	135 / 315	2,716
G	England	EU	47 / 227	3,870
GD	Isle Of Man	EU	45 / 225	3,646
GI	N. Irland	EU	45 / 225	3,586
GJ	Jersey	EU	50 / 230	3,825
GM	Scotland	EU	43 / 223	3,633
GU	Guernsey	EU	50 / 230	3,799
GW	Wales	EU	47 / 227	3,712
H4	Solomon Is.	OC	281 / 101	8,421
HA-HG	Hungary	EU	46 / 226	4,766
HB	Switzerland	EU	50 / 230	4,277
HB0	Liechtenstein	EU	50 / 230	4,384
HC-HD	Ecuador	SA	179 / 359	2,486
HC8-HD8	Galapagos Is.	SA	201 / 21	2,749
HH	Haiti	NA	160 / 340	1,220
HI	Dominican Rep.	NA	154 / 334	1,305
HJ-HK	Columbia	SA	171 / 351	2,146

HK0	Bajo Nuevo	NA	180 / 351	1,374
HK0	Malpelo	NA	186 / 6	2,204
HK0	San Andres	NA	188 / 8	1,620
HL	Korea	AS	339 / 159	7,108
HO-HP	Panama	NA	183 / 3	1,852
HQ-HR	Honduras	NA	201 / 21	1,593
HS	Thailand	AS	1 / 181	9,002
HV	Vatican City	EU	54 / 234	4,676
HZ	Saudi Arabia	AS	49 / 229	6,958
I	Italy	EU	62 / 242	3,491
IS0/IM0	Sardinia	EU	57 / 237	4,577
J2	Djibouti	AF	61 / 241	7,423
J3	Grenada	NA	143 / 323	1,946
J5	Guinea-bissau	AF	96 / 276	4,259
J6	St. Lucia	NA	140 / 320	1,858
J7	Dominica	NA	138 / 318	1,767
J8	St. Vincent	NA	138 / 318	1,895
JA-JS	Japan	AS	329 / 149	6,909
JD	Ogasawara	AS	324 / 144	7,354
JD	Minami-Torish.	OC	313 / 133	7,007
JT-JV	Mongolia	AS	356 / 176	6,631
JW	Svalbard Is.	EU	14 / 194	3,869
JX	Jan Mayen Is.	EU	23 / 203	3,827
JY	Jordan	AS	50 / 230	6,120
K/W/N	USA (Wash. DC)	NA	22 / 202	231
KC6	E Caroline Is.	OC	299 / 119	7,772
KC6/V73	W Caroline Is.	OC	315 / 135	8,489
KG4	Guantanamo Bay	NA	168 / 348	1,112
KH1	Baker & How. Is	OC	275 / 95	6,643
KH2	Guam	OC	268 / 88	4,338
KH3	Johnston Is.	OC	285 / 105	5,610
KH4	Midway Is.	OC	298 / 118	5,545
KH5	Palmyra Is.	OC	271 / 91	5,603
KH5K	Kingman Reef	OC	273 / 93	5,588
KH6	Hawaii	OC	282 / 102	4,787
KH7	Kure Is.	OC	299 / 119	5,611
KH8	American Samoa	OC	260 / 80	6,907
KH9	Wake Is.	OC	300 / 120	6,701
KH0	Mariana Is.	OC	313 / 133	7,815
KL7	Alaska	NA	324 / 144	3,481
KP1	Navassa Is.	NA	169 / 349	1,221
KP2	Virgin Is.	NA	141 / 321	1,476
KP4	Puerto Rico	NA	144 / 324	1,414
KP5	Desecheo Is.	NA	148 / 328	1,385
KX6/V73	Marshall Is.	OC	294 / 114	7,035
LA-LN	Norway	EU	36 / 216	4,090
LO-LW	Argentina	SA	163 / 343	4,992
LX	Luxembourg	EU	48 / 228	4,202
LZ	Bulgaria	EU	48 / 228	5,117
OA-OC	Peru	SA	178 / 358	3,302
OD	Lebanon	AS	49 / 229	6,010
OE	Austria	EU	46 / 226	4,629
OF-OI	Finland	EU	32 / 212	4,530
OH0	Aland Is.	EU	33 / 213	4,378
OJ0	Market Reef	EU	33 / 213	4,345
OK-OM	Czechoslovakia	EU	45 / 225	4,492
ON-OT	Belgium	EU	47 / 227	4,068
OX	Greenland	NA	23 / 203	2,191
OY	Faeroe Is.	EU	35 / 215	3,483
OZ	Denmark	EU	40 / 220	4,262
P2	Papua N. Guinea	OC	291 / 111	9,036
P4	Aruba	SA	159 / 339	1,695
PA-PI	Netherlands	EU	45 / 225	4,053
PJ2-4	Neth. Antilles	SA	158 / 338	1,749
PJ5-8	St Maarten	NA	138 / 318	1,555
PP-PY	Brazil	SA	145 / 325	4,672
PP0-PY0	Fernando de Nor.	SA	121 / 301	4,023
PP0-PY0	St Peter-Pauls	SA	116 / 296	3,903
PP0-PY0	Trinid. & MV. Is	SA	97 / 277	3,215
PZ	Suriname	SA	138 / 318	2,544
S2	Bangladesh	AS	11 / 191	8,238
S7	Seychelles IS	AF	64 / 244	8,803
S9	Sao Tome	AF	93 / 273	5,899
SA-SM	Sweden	EU	35 / 215	4,347
SN-SR	Poland	EU	41 / 221	4,675
ST	Sudan	AF	65 / 245	6,710
ST0	Southern Sudan	AF	74 / 254	7,124
SU	Egypt	AF	55 / 235	6,007
SV-SZ	Greece	EU	52 / 232	5,320
SV5	Dodecanese Is.	EU	52 / 232	5,549
SV9	Crete	EU	54 / 234	5,489
SV/A	Mt. Athos	EU	50 / 230	5,258
T2	Tuvalu	OC	271 / 91	7,285
T30	West Kiribati	OC	276 / 96	7,333
T31	Central Kiribati	OC	270 / 90	6,677
T32	East Kiribati	OC	251 / 71	5,605

T33	Banaba	OC	267 / 87	6,494
T5	Somalia	AF	65 / 245	7,825
T7	San Marino	EU	52 / 232	4,626
TA-TC	Turkey	AS	46 / 226	5,629
TF	Iceland	EU	32 / 212	3,627
TG/TD	Guatemala	NA	210 / 30	1,638
TI/TE	Costa Rica	NA	192 / 12	1,813
TI9	Cocos Is.	NA	197 / 17	2,200
TJ	Camroon	AF	86 / 266	6,086
TK	Corsica	EU	55 / 235	4,514
TL	Central Afr. Rep.	AF	82 / 262	6,400
TN	Congo	AF	91 / 271	6,577
TR	Gabon Rep.	AF	92 / 272	6,099
TT	Chad Rep.	AF	78 / 258	5,929
TU	Ivory Coast	AF	95 / 275	5,130
TY	Benin	AF	90 / 270	5,451
TZ	Mali Rep.	AF	90 / 270	4,611
UA1/3/4/6	Eur. USSR	EU	31 / 211	4,684
UA1	Franz Josef Land	EU	5 / 185	3,093
UA2	Kalingrad	EU	38 / 218	4,562
UA9/0	AS. USSR	AS	5 / 185	6,070
UB/T/Y	Ukraine	EU	39 / 219	5,098
UC	Byelorussia	EU	37 / 217	4,837
UD	Azerbaijan	AS	36 / 216	6,233
UF	Georgia	AS	39 / 219	6,010
UG	Armenia	AS	40 / 220	6,043
UH	Turkmenistan	AS	33 / 213	6,627
UI	Uzbekistan	AS	28 / 208	6,680
UJ	Tadzhikistan	AS	26 / 206	6,787
UL	Kazakhstan	AS	15 / 195	6,110
UM	Kirghizia	AS	20 / 200	6,803
UO	Moldavia	EU	42 / 222	5,171
UP	Lithuania	EU	37 / 217	4,751
UQ	Latvia	EU	35 / 215	4,611
UR	Estonia	EU	33 / 213	4,572
V2	Antigua & Barb.	NA	132 / 312	1,673
V3	Belize	NA	209 / 29	1,446
V4	St. Chris.& Nev.	NA	139 / 319	1,631
V8	Brunei	OC	340 / 160	9,476
VE-VO	Canada(Otttawa)	NA	12 / 192	680
VK	Australia	OC	258 / 78	9,646
VK2	Lord Howe Is.	OC	258 / 78	9,148
VK9	Willis Is.	OC	281 / 101	9,166
VK9	Cocos-Keel. Is.	OC	11 / 191	10,761
VK9	Mellish Reef	OC	276 / 96	8,884
VK9	Norfolk Is.	OC	257 / 77	8,593
VK9X	Christmas Is.	OC	350 / 170	10,660
VK0	Heard Is.	AF	141 / 321	10,683
VK0	Macquarie Is.	OC	226 / 46	9,446
VP2E	Anguilla	NA	138 / 318	1,538
VP2K	St. Kitts	NA	138 / 318	1,610
VP2M	Montserrat	NA	138 / 318	1,653
VP2V	Br. Virgin Is.	NA	141 / 321	1,474
VP5	Turks & Caico Is	NA	156 / 336	1,032
VP8	Falkland Is.	SA	169 / 349	6,165
VP8	S Georgia Is.	SA	157 / 337	6,677
VP8	S Orkney Is.	SA	164 / 344	6,869
VP8	S Sandwich Is.	SA	155 / 335	7,051
VP8	S Shetland Is.	SA	171 / 351	6,845
VP9	Bermuda	NA	103 / 283	830
VQ9	Chagos	AF	50 / 230	9,740
VR6	Pitcairn Is.	OC	226 / 46	5,380
VS6	Hong Kong	AS	346 / 166	8,319
VU	India	AS	31 / 211	8,207
VU7	Anda. & Nic. Is.	AS	10 / 190	9,229
VU7	Laccadive Is.	AS	39 / 219	8,662
XA-XI	Mexico	NA	233 / 53	1,683
XA4-XI4	Revilla Gigedo	NA	249 / 69	2,310
XT	Burkina Faso	AF	87 / 267	4,991
XU	Khmer Rep	AS	355 / 175	9,153
XV	Vietnam	AS	353 / 173	9,192
XW	Lao Rep	AS	359 / 179	8,712
XX9	Macao	AS	348 / 168	8,377
XY-XZ	Burma	AS	6 / 186	8,779
Y2-Y9	GDR (East Ger.)	EU	43 / 223	4,381
YA	Afghanistan	AS	28 / 208	7,162
YB-YH	Indonesia	OC	349 / 169	10,339
YI	Iraq	AS	45 / 225	6,423
YJ	New Hebrides	OC	268 / 88	8,226
YK	Syria	AS	49 / 229	6,048
YN	Nicaragua	NA	198 / 18	1,707
YO-YR	Romania	EU	46 / 226	5,164
YS	EL Salvador	NA	205 / 25	1,648
YT-YU	Yugoslavia	EU	48 / 228	4,913
YV-YY	Venezuela	SA	155 / 335	1,892
YV0	Aves Is.	NA	154 / 334	1,783

Z2	Zimbabwe	AF	97 / 277	8,030
ZA	Albania	EU	51 / 231	5,000
ZB	Gibraltar	EU	66 / 246	3,977
ZC4	UK Base Cyprus	AS	50 / 230	5,853
ZD7	Saint Helena	AF	113 / 293	5,929
ZD8	Ascension Is.	AF	112 / 292	5,140
ZD9	Tristan da Cunha	AF	138 / 318	6,321
ZF	Cayman Is.	NA	189 / 9	1,136
ZK1	S Cook Is.	OC	248 / 68	6,570
ZK1	N Cook Is.	OC	257 / 77	6,245
ZK2	Niue	OC	255 / 75	7,047
ZK3	Tokelau Is.	OC	259 / 79	6,458
ZL-ZM	New Zealand	OC	245 / 65	8,454
ZL7	Chatham Is.	OC	234 / 54	8,201
ZL8	Kermadec Is.	OC	249 / 69	7,873
ZL9	Auck & Camp. Is	OC	228 / 48	9,024
ZP	Paraguay	SA	159 / 339	4,427
ZR-ZU	South Africa	AF	116 / 296	7,877
ZS9	Walvis Bay	AF	96 / 276	7,452
ZR2-ZU2	Marion & P.e. Is.	AF	124 / 304	9,136
ZR3-ZU3	Namibia	AF	106 / 286	7,406
1A0	Sov. Mil. Malta	EU	58 / 238	4,974
1S	Spratly Is.	AS	345 / 165	9,273
3A	Monaco	EU	54 / 234	4,389
3B6-7	St Bran. & Agal.	AF	69 / 249	9,127
3B8	Mauritius	AF	80 / 260	9,575
3B9	Rodriguez Is.	AF	75 / 255	9,875
3C	Eq. Guinea	AF	90 / 270	5,999
3C0	Pagalu Is.	AF	89 / 269	5,910
3D2	Fiji Is.	OC	263 / 83	7,631
3D2X	Rotuma Is.	OC	270 / 90	7,610
3D6	Swaziland	AF	102 / 282	8,376
3W/XV	Viet Nam	AS	353 / 173	9,192
3V	Tunisia	AF	59 / 239	4,730
3X	Guinea	AF	96 / 276	4,449
3Y	Bouvet Is.	AF	140 / 320	7,871
4P-4S	Sri Lanka	AS	30 / 210	9,159
4U	Geneva (ITU)	EU	51 / 231	4,264
4U	UN HQ NY City	NA	35 / 215	420
4W	Yemen	AS	58 / 238	7,298
4X/4Z	Israel	AS	51 / 231	6,077
5A	Libya	AF	62 / 242	5,028
5B/ZC	Cyprus	AS	50 / 230	5,853
5H-5I	Tanzania	AF	79 / 259	8,062
5N-5O	Nigeria	AF	90 / 270	5,482
5R-5S	Madagascar	AF	85 / 265	8,955
5T	Mauritania	AF	90 / 270	3,977
5U	Niger Rep.	AF	84 / 264	5,151
5V	Togo Rep.	AF	91 / 271	5,418
5W	Western Samoa	OC	261 / 81	6,923
5X	Uganda	AF	77 / 257	7,316
5Y-5Z	Kenya	AF	75 / 255	7,749
6O	Somali	AF	66 / 246	8,015
6V-6W	Senegal	AF	95 / 275	3,976
6Y	Jamaica	NA	172 / 352	1,239
7O	S Yemen	AS	58 / 238	7,452
7P	Lesotho	AF	106 / 286	8,222
7Q	Malawi	AF	89 / 269	8,127
7T-7Y	Algeria	AF	62 / 242	4,391
8P	Barbados	NA	140 / 320	2,058
8Q	Maldive Is.	AS	42 / 222	9,327
8R	Guyana	SA	142 / 322	2,382
9G	Ghana	AF	92 / 272	5,278
9H	Malta	EU	58 / 238	4,969
9I-9J	Zambia	AF	93 / 273	7,735
9K	Kuwait	AF	45 / 225	6,733
9L	Sierra Leone	AF	98 / 278	4,518
9M2-9M4	W Malaysia	AS	359 / 179	9,748
9M6-9M8	E Malaysia	OC	337 / 157	9,435
9N	Nepal	AS	16 / 196	7,928
9Q-9T	Zaire	AF	92 / 272	6,634
9U	Burundi	AF	82 / 262	7,318
9V	Singapore	AS	356 / 176	9,861
9X	Rwanda	AF	80 / 260	7,311
9Y	Trinidad	SA	145 / 325	2,002
J2/A	Abuali	AS	45 / 225	6,924

So, you ask, what do I do now?

Well, there's the WAC (Worked All Continents) Award. Sponsored by the IARU, submit QSLs from 6 continents (NA, SA, EU, AF, OC, AS) to qualify.

Then there's the DXCC (DX Century Club) Award. Sponsored by the ARRL, submit QSLs from 100 different countries to qualify. Add endorsements for additional countries (there are 324 on this list!). Endorsements for different modes & bands, too!

No-Code

(from page 1)

the volunteer examiners who administer amateur examinations, or the Commission's workload.

The amateur service exists for the purpose of self-training, inter-communication and investigations to be carried out by duly authorized persons interested in radio technique solely with a personal aim, and without financial gain.

Individuals seeking a license to operate an amateur station must prove that they can send correctly by hand and receive correctly by ear, text in Morse code signals. Although this requirement may be waived for an operator of an amateur station transmitting only on frequencies above 30 MHz, each of the five classes of operator licenses issued by the Commission requires the applicant to pass an examination in the international Morse code.

The Communicator Class operator license would not require knowledge of Morse code telegraphy messages. Privileges for the Communicator Class would include all emission types. The Communicator Class license would replace two existing beginner operator classes and would simplify the amateur operator license structure.

The Commission would require applicants for the Communicator Class license to pass a 60 question written examination. The new question pool would be comprised of the questions from the two pools currently used in the Novice and Technician license examinations as well as the addition of new questions.

The proposed transmitter power for the Communicator Class would be 200 watts peak envelope power and the licensee's station would be eligible for a Group D call sign.

Stations with Communicator Class control operators would not be permitted to transmit on the 2 and 6 meter VHF bands and the HF bands.

The Commission is requesting comments on the effect of excluding Communicator Class licensees from the two VHF bands.

Comments are also requested on the desirability of including the opportunity for Communicator Class licensees to experience on-the-air telegraphy operation on the HF bands.

Additionally, a Communicator Class licensee who passes or receives credit for a telegraphy examination would be authorized the privileges of the Technician Class.

The Commission is requesting comments on all aspects of this proposal.

[Ed Note: The full text of the NPRM was not yet available at press time. It will be printed here, in it's entirety, next month. The comment period on the NPRM is expected to be in the order of 6 months long. IF IMPLEMENTED, best guess would be mid 1991.]

CQ FOX HUNT

I am looking for individuals who are interested in Fox Hunting (aka Radio Direction Finding). Whether you are experienced or new to this radio sport, a lot of fun is to be had if we can get a group of hams to participate in a hunt. I have been fox hunting for a couple of years and now having moved to Wake County, I would like to get regular hunts started here. While having a good time is important, those who participate usually develop or polish skills that all hams should have. Building gadgets, antennas, and friendly competition is almost always the result of a fox hunt. This aspect of ham radio is extremely popular in Europe, and has recently gained a lot of attention here in the U.S.

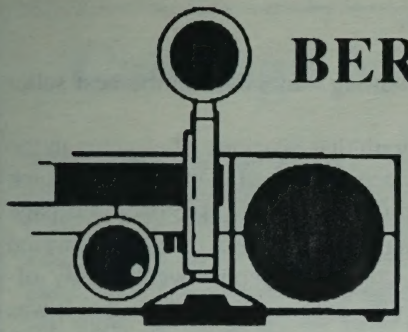
I would like to hear from those who would like to give this a try. All that is required is a desire for fun, a 2 meter receiver, and some type of directional antenna (if you don't have the antenna - it can be built for under $2). If interested, call me at 556-0395, or on the 04/64 - 39/79 repeaters.

Jeff, NX9T

Help Wanted!!

I need help to hook up a PK-232 AND HP-110 portable computer together. Call days or evenings:

K9PM - Paul, 851-1222 in Raleigh.



BERT'S BEAT

"Bert" Bailey, W4FMN

Get Ready -- It's Coming!!

Winter is winding down -- we hope -- and again runners will lace up and trot. The first competition is the Bowties 5K, which will be over and done with by the time this EXCITER gets into print, BUT the season is in, so standby by to QSO race directors as they try to start the runners at the same time and herd them thru the (correct) chutes at QRT. Those interested will be contacted by me or maybe Bill, WB4CCA, who has become such a fixture at these local spurts of energy that the rice director of the NC Roadrunners Club, Jim Young, QSO's ol Bill direct and sets up communications. OK, so sometimes I get shot out of the saddle. Suits me fine. Just like combat, I got a replacement. Every single time, we saddle up ol Bill's team we say a silent prayer for one member of Bill's team who is up racing with the angels, our late and illimitable Jack Kenny, one of RARS' past giants.

* * * * * *

Is CW Still Around??

One skill that separates all hams from the multitude is our skill with Morse Code. Some are against requiring it of all who wish to operate in the ether of hams. I believe the CW requirement has been dropped in certain countries, CW is still required to maintain our licenses. So why is CW still required? So why is CW the prenniel favorite of all good hams? If you monitor the traffic nets, you'll see why. Some, maybe many, will try to correct me on this, but they will be WRONG. The bulk of ham traffic is passed on CW nets. The generally high caliber hams who operate CW nets are highly proficient. Traffic is passed without excessive ragchews, which are ok in their place, but one does not pass traffic on CW While Ragchewing. That comes after the bulk of traffic has been passed. Compared with RTTY and packet, CW is pretty slow. So, again, why is CW so prominent in hamdom? The causes for relative lack of interest in RTTY may be that it takes lots of patience to operate in that mode. When you receive RTTY from an unknown station, you have to determine quickly at least 3 things: speed, Baudot or ASCII, and shift (170, 425, 850). [Ed. Note: I refuse to sit idly by (if you call re-typing Bert's article "sitting idly by"), while Bert bad-mouth's my favorite mode! Bert, telling Baudot apart from ASCII is about as hard as distinguishing USB from LSB. If you're using the "wrong" mode, you can hear the signal, but you just can't copy it! So u switch! After two or three such times, your "ear" can tell the difference. As for tones, 170 reigns king, 425 is commercial only, and 850s are pretty rare anymore. Back to Bert...] So there are some problems with RTTY even as outstanding as it is with passing traffic. [Ed: grumble..grumble]

Now packet switching was supposed to change all this trouble. It started out vfb. Graphical display of traffic. You saw what you could handle and grabbed it off the screen. Transmissions of the Bible in milliseconds, and all that sort of thing. But what has happened? Some people won't pick up traffic even when it's staring them in the face and maybe, to top it all off, addressed to them! Now lots of brilliant hams are working on these problems and probably the future looks bright indeed. BUT until all manner of hams get the ball rolling ON THE GOAL LINE, most of us will stick with CW if traffic MUST be passed.

'Nuff said. 73s to all.

HF Station For Sale:

Drake R4C receiver w/all filters, T4XC transmitter, power supply, speaker, manuals. Very clean. Free setup for RARS members if you need the assistance. $500.

K8AC, Floyd Sense, 851-7546.

[Ed Note: A "golden oldie!" A "Cadillac" for <$1K!]

RARS' Sparkie Collins Stirs Controversy in DC!

Do you recall the ad from the November '89 EXCITER? "Wanted: A Good Woman. Must be able to clean, cook, sew, climb towers, string antennas, bury radials, and run a dupe sheet. Must have own rig and tower. Send picture of rig & tower. Sparkie Collins, c/o EXCITER."

Well it seems ol' Sparkie has stirred up quite a controversy up in the Nation's Capitol!

It all started pretty innocently here in Raleigh ... I was browsing the K4IWW packet BBS for possible "filler" material for the EXCITER. I came across the want ad which was addressed to Herb, N4UE, who is editor of the FEEDLINE, the Cary Amateur Radio Club's newsletter. Now I've heard similar jokes many times before -- "customized" for the intended audience: fishing enthusiasts got the *"...must be able to dig worms, clean fish, must own boat & motor. Send picture of boat and motor"*, routine. I thought the "ham version" was kind of cute, so I "borrowed" the material. After all, if Sparkie was for real, I didn't think he'd mind advertising in Raleigh as well as in Cary!

Enter AUTO-CALL, the newsletter for the Foundation for Amateur Radio (FAR). Auto-Call is published by Ethel Smith, K4LMB, and FAR is an association of radio clubs in the greater DC area. There are 54 member clubs in FAR throughout Virginia, Maryland, and Washington DC (including the Capitol Hill Amateur Radio Society, the Pentagon ARC, and the Dept. of State ARC). Auto-Call has a monthly circulation of 1,700! We (editors) had just started swapping newsletters -- she gets our EXCITER, and I get AUTO-CALL, with the understanding that we can use any material from the other's newsletter in our own.

Not too long ago, a letter came addressed to Sparkie, via the RARS PO box.

Dear Sparkie,

"Thanks for putting Auto-Call on the best seller list!"

"It all began with that hilarious ad of yours in the Raleigh ARS newsletter. I loved it and jut had to pick it up for the Auto-Call magazine (see enclosed page from the December issue). I got a couple of amused comments, but a couple of people were highly offended by it. All efforts to convince them that it was written in jest were to no avail. They still didn't think I should have "accepted" it for publication."

"I decided to write a little apology in the January issue and let people know that we really wanted to hear from them anytime they felt anything we published was inappropriate. That apology really brought in the mail and telephone calls. Your Want Ad is now one of the most highly publicized ads we ever printed! I particularly like the post card I got saying this fellow is going to make a hundred copies [of the want ad] for his club."

"I thought you might enjoy this saga of how you made Auto-Call famous. Gee, I wish I were a good cook!"

73,

Ethel Smith, K4LMB
Auto-Call Editor

Well folks, the saga continues ... the February AUTO-CALL has that post card printed: "Your shack sale ad was the finest bit of journalism your Auto-Call has put forth to us hams. I sent the original ad to a ham club in Penn-Ohio. I will canvass my club for your ad and xerox a hundred of them. It would be a shame to deny other hams a chance to enjoy a gud laugh. 73, Jim"

To Sparkie Collins ... (or who ever posted that packet message on K4IWW's board) ...you are now (in)famous ... Congratulations!

To Ethel Smith ... if you really want to turn some heads with risque southern humor in your newsletter, perhaps I should introduce you to another fine N.C. radio club: The JARS!

73, Vince, AA4MY

Call Sign Mugs

Your amateur radio call sign on a 10 oz. distinctive, high quality, stoneware coffee mug. Your choice of the ARRL or QCWA logo on the flip side. Get one for the shack and one for the work place. Mug pairs can have the same or different call signs. Coffee mugs are $8.95 each, or two for $15.95. Different call signs allowed. Names added $1.00 extra per cup. Price includes S/H for the continental US and APO.

Excellent Gifts or Club Awards!

NC residents add 5% sales tax. State your logo choice.

Call Sign Cups
P.O. Box 17062 Dept. M
Raleigh, NC 27619

Member: Professional Photographers of America, Inc.

Images by Swanson

Portraits · Weddings · Commercial

Thomas Swanson, N4IZE **5729 Wintergreen Dr**
782-0791 **Raleigh, NC 27609**

THE PINE BOX

FURNITURE & GIFTS

Cameron Village Shopping Center

Arline Bliss 411 Daniels St.

Jeff Bliss 833-8104

The Yellow Sheets

For 29 years now, the Ham Trader "Yellow Sheets" has been THE publication for buying and selling used ham gear. This bi-weekly publication is available by subscription only, and is published on yellow paper- hence the name. About 20 years ago, the publisher decided to switch to white paper to reduce his costs. There was a tremendous uproar from long-time subscribers and it was back to the yellow paper again. I suspect we subscribers are paying dearly for the "yellow", but it just wouldn't be the same without it.

The "Yellow Sheets" is generally composed of about 5 sheets of paper, printed on both sides, full of ads for ham radio gear. Prices are generally determined by what others are asking for similar equipment, and you can usually find more than one person selling what you are looking for - so, you can easily tell if a given price is reasonable or not.

The advantage to using this publication over the ads in QST or CQ is that the information is current - no more than a week or so old. If you have ever tried to purchase something from a QST ad, you know that it's usually been sold 3 or 4 months before the ad runs. In general, I have found that the folks who buy and sell through the "sheets" are honest in their dealings, but you should always beware when buying unseen gear through the mail. What is "mint condition" to one may be trash to another. You can subscribe to the "Yellow Sheets" by writing to: Ham Trader Yellow Sheets, P.O. Box 15142, Seattle, WA 98115. The current rates are: 1 year-$15, 2 years-$30.

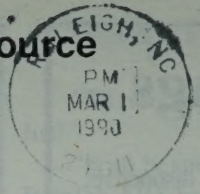
And remember- Caveat Emptor!

Floyd Sense, K8AC

[Ed. Note: I've been a Yellow Sheets reader for about the past 5 years ... found many a good deal that way. I've only been burned once by a "rubberized" check (and some !*@#$! bank in NJ where I finally gave up waiting on hold for over an hour!!). I was out $55 (+ the phone call). Ever since then, it's been UPS COD. And I make the UPS driver wait for me to open the box first!]

Amateur Radio -- A National Resource

Raleigh Amateur Radio Society, Inc.
P.O. Box 17124
Raleigh, NC 27619



MR. CHARLES R. LITTLEWOOD *89
2005 QUAIL RIDGE ROAD
RALEIGH NC 27609

Next Regular RARS Meeting: Wednesday, April 4, 7:30 PM
Raleigh YMCA , 1601 Hillsborough St.
RARS Nets: Daily @ 8:00 PM on 146.04/64
Tuesday, 7:00 PM on 28.364
Technical Information Net - Saturday, 8:30 PM on 146.04/64

Events Calendar

Mar	03 - 04	ARRL Int'l DX Contest, Phone
Mar	05	Exams: 7:30 PM, McKimmon Center, NCSU, AA4MY for info, 847-8512
Mar	**06**	**RARS Annual Awards Banquet -** Ballentine's Cafeteria - 6:30 PM
Mar	08	VHF/UHF SIG Meeting @ WA4MJF's QTH. 266-4434
Mar	10	Exams: Durham, Pete Goolsby, KY4Y for info, 544-3215
Mar	14	Homebrew SIG Meeting, N1BA's QTH, 7:30 PM. Info 846-2692; 04/64
Mar	**17 - 18**	**HAMFEST!! Charlotte, NC**
Mar	**21**	RARS Advisory Board Meeting. **7:00 PM,** YMCA All RARS Members Welcome!
Mar	24 - 25	CQ WW WPX Contest - Phone
Mar	27	2 Meter FM SIG Meeting, YMCA, 7:30 PM. AB4OZ for info 787-1111
Apr	04	Regular RARS Meeting, 7:30 PM, YMCA -- Bring a friend!
Apr	**08**	**HAMFEST!! Raleigh (that's US, folks!!)**